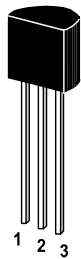


PNP

Si-Epitaxial Planar Transistors

PNP

Version 2004-01-20



Standard Pinning
1 = C 2 = B 3 = E

Power dissipation – Verlustleistung 625 mW

Plastic case TO-92
Kunststoffgehäuse (10D3)

Weight approx. – Gewicht ca. 0.18 g

Plastic material has UL classification 94V-0
Gehäusematerial UL94V-0 klassifiziert

Standard packaging taped in ammo pack
Standard Lieferform gegurtet in Ammo-Pack

Maximum ratings ($T_A = 25^\circ\text{C}$)**Grenzwerte ($T_A = 25^\circ\text{C}$)**

			2N3905, 2N3906
Collector-Emitter-voltage	B open	- V_{CE0}	40 V
Collector-Base-voltage	E open	- V_{CE0}	40 V
Emitter-Base-voltage	C open	- V_{EB0}	5 V
Power dissipation – Verlustleistung		P_{tot}	625 mW ¹⁾
Collector current – Kollektorstrom (dc)		- I_C	100 mA
Peak collector current – Kollektorspitzenstrom		- I_{CM}	200 mA
Junction temp. – Sperrschichttemperatur		T_j	150°C
Storage temperature – Lagerungstemperatur		T_s	- 55...+ 150°C

Characteristics ($T_j = 25^\circ\text{C}$)**Kennwerte ($T_j = 25^\circ\text{C}$)**

		Min.	Typ.	Max.
Collector saturation volt. – Kollektor-Sättigungsspannung				
- $I_C = 10\text{ mA}$, - $I_B = 1\text{ mA}$	- $V_{CE\text{sat}}$	—	—	250 mV
- $I_C = 50\text{ mA}$, - $I_B = 5\text{ mA}$	- $V_{CE\text{sat}}$	—	—	400 mV
Base saturation voltage – Basis-Sättigungsspannung				
- $I_C = 10\text{ mA}$, - $I_B = 1\text{ mA}$	- $V_{BE\text{sat}}$	—	—	850 mV
- $I_C = 50\text{ mA}$, - $I_B = 5\text{ mA}$	- $V_{BE\text{sat}}$	—	—	950 mV
Collector cutoff current – Kollektorreststrom				
- $V_{CE} = 30\text{ V}$, - $V_{EB} = 3\text{ V}$	- I_{CEV}	—	—	50 nA
Emitter cutoff current – Emitterreststrom				
- $V_{CE} = 30\text{ V}$, - $V_{EB} = 3\text{ V}$	- I_{EBV}	—	—	50 nA

¹⁾ Valid, if leads are kept at ambient temperature at a distance of 2 mm from case

Gültig, wenn die Anschlußdrähte in 2 mm Abstand von Gehäuse auf Umgebungstemperatur gehalten werden

Characteristics ($T_j = 25^\circ\text{C}$)Kennwerte ($T_j = 25^\circ\text{C}$)

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis					
- $V_{CE} = 1\text{ V}$, - $I_C = 0.1\text{ mA}$	2N3905	h_{FE}	30	—	—
	2N3906	h_{FE}	60	—	—
- $V_{CE} = 1\text{ V}$, - $I_C = 1\text{ mA}$	2N3905	h_{FE}	40	—	—
	2N3906	h_{FE}	80	—	—
- $V_{CE} = 1\text{ V}$, - $I_C = 10\text{ mA}$	2N3905	h_{FE}	50	—	150
	2N3906	h_{FE}	100	—	300
- $V_{CE} = 1\text{ V}$, - $I_C = 50\text{ mA}$	2N3905	h_{FE}	30	—	—
	2N3906	h_{FE}	60	—	—
- $V_{CE} = 1\text{ V}$, - $I_C = 100\text{ mA}$	2N3905	h_{FE}	15	—	—
	2N3906	h_{FE}	30	—	—
Gain-Bandwidth Product – Transitfrequenz					
- $V_{CE} = 20\text{ V}$, - $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	2N3905	f_T	200 MHz	—	—
	2N3906	f_T	250 MHz	—	—
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
- $V_{CB} = 5\text{ V}$, $I_E = i_e = 0$, $f = 100\text{ kHz}$		C_{CB0}	—	—	4.5 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
- $V_{EB} = 0.5\text{ V}$, $I_C = i_c = 0$, $f = 100\text{ kHz}$		C_{EB0}	—	—	10 pF
Noise figure – Rauschzahl					
- $V_{CE} = 5\text{ V}$, - $I_C = 100\text{ }\mu\text{A}$ $R_G = 1\text{ k}\Omega$ $f = 10\text{ Hz} \dots 15.7\text{ kHz}$	2N3905	F	—	—	5 dB
	2N3906	F	—	—	4 dB
Switching times – Schaltzeiten					
turn-on time	$I_{Con} = 10\text{ mA}$,	t_{on}	—	—	70
turn-off time	$I_{Bon} = -I_{Boff} = 1\text{ mA}$	t_{off}	—	—	300
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft			R_{thA}		200 K/W ¹⁾
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren			2N3903, 2N3904		

¹⁾ Valid, if leads are kept at ambient temperature at a distance of 2 mm from case
Gültig, wenn die Anschlußdrähte in 2 mm Abstand von Gehäuse auf Umgebungstemperatur gehalten werden